Customer No.: 31561
Application No.: 10/709,261
Docket NO.: 8905-US-PA-1

REMARKS

Present Status of the Application

Applicants appreciate that the Office Action considers claim 16 to be allowable.

Claims 1, 2, 3, 6-8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso et al. (U. S. Patent 6,012,207; hereinafter Ogiso) in view of Lee et al. (U. S. Patent 6,597,085; hereinafter Lee). Claims 4, 5, 9, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee and further in view of Rosen (U. S. Patent 2,947,296). The Office Action also objects specification. Applicants have amended specifications. After entry of amendments, claims 1-16 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 103

1. Claims 1, 2, 3, 6-8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee. Claims 4, 5, 9, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogiso in view of Lee and further in view of Rosen. Applicants respectfully traverse the rejections for at least the reasons set for the below.

2. The present invention particularly using the augmenting surface electrode as the additional surface electrode on the piezoelectric work-piece, in order to ***smooth out the non-smooth stress distributions and electrical polarizations***, resulted by the manufacturing process. The augmenting surface electrode of the present invention doe not physically connect to the electrical circuit during operation.

3. Particularly for example in FIG 13, the augmenting electrode 1316 is placed near the tipped end 1312 of the work piece 130 so as to disperse the accumulation of electrical charges.

4. In re Ogiso (see Fig. 4), the function electrodes 22a and 22f are on the surface of the piezoelectric member 21. In addition several electrodes 23a – 23f and 24a – 24f. The electrodes 23a – 23f and 24a – 24f are used to have the desired polarization (col. 5, lines 4-35). Basically, Ogiso is to form different polarization orientation distribution regions within one piezoelectric member.

5. In other words, ***Ogiso does not disclose the function electrodes 22a and 22f with the acute angle. And, electrodes 23a – 23f and 24a – 24f are used to have the polarization, but not the augment electrode used to disperse the charges to the acut tip.*** Indeed, Ogiso discloses a different method for fabricating the piezoelectric workpiece as recited in independent claims 1, 6 and 11.

6. In re Lee, the electrode is design in modal-shaped actuator to serve as the piezoelectric transducer apparatus for converting the input energy of one form into an output energy of another form (Abstract). Lee does not disclose the augmenting electrode of the present invention either.

7. In other words, Ogiso and Lee either alone on in combination do not disclose the foregoing discussed features of the present invention as recited in independent claim 1, 6 and 11. With at least the same foregoing reasons, claims 2, 3, 7-8, and 12-13 should allowable as well.

8. With respect to dependent claims 4, 5, 9, 10, 14, and 15, the Office Action further cites Rosen. However, Rosen failed to disclose the augment electrode associating with the function electrode with the acute angle, either. Even though Rosen is in combination with Ogiso and

Lee, Rosen does not provide the missing features recited in independent claims for Ogiso and Lee.

For at least the foregoing reasons, Applicant respectfully submits that independent claims 1, 6, and 11 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-5, 7-10 and 12-16 patently define over the prior art references as well.

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CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-16 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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Belinda Lee
Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email: belinda@jcipgroup.com.tw
Usa@jcipgroup.com.tw